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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/799,663

03/15/2004

Kazushige Takagi

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21171 7590 06/29/2007  
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EXAMINER

SAID, MANSOUR M

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

06/29/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/799,663	Applicant(s) TAKAGI ET AL.	
	Examiner MANSOUR M. SAID	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-6 and 11 is/are allowed.
- 6) ☒ Claim(s) 7-9 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/15/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagao et al. (6,653,993 B1; hereinafter referred to as Nagao) in view of Hashimoto Takashi et al. (JP-11-065523; hereinafter referred to as Hashimoto).**

**As to claim 7**, Nagao teaches a method for driving a plasma display panel (figure 5) which displays a frame having a plurality of sub-fields (figures 15, 18, 20, 22, 25, 29, 34, 39, 43-44 & 46-47), the method comprising: wherein one of the voltage waveforms of the sustain pulses is a step-like waveform (staircase waveform) (figures 46-47), and column 33, lines 54-67).

Nagao does not expressly disclose a plural kinds of sustain pulses having different voltage waveforms for a sustain period of at least one sub-field.

However, Hashimoto teaches a plural kinds of sustain pulses having different voltage waveforms for a sustain period of at least one sub-field (abstract and figure 2).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to incorporate Hashimoto's PDP device comprising a plural sustain pulses having different voltage waveforms (figure 2) into Nagao's PDP so as to improve the efficiency of discharging light emission (abstract).

**As to claim 8**, Nagao teaches wherein the step-like waveform comprises a rectangular pulse and an offset voltage added to the rectangular pulse (figures 46-47 and column 33, lines 54-67).

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As to claim 9, Nagao teaches wherein another voltage waveform of the sustain pulses is a rectangular pulse having a lower ultimate voltage than the sustain pulse of the step-like waveform (figures 15, 18, 20, 22, 25, 29, 34, 39, 43-44 & 46-47, column 33, lines 15-67, column 34, lines 20-67 and column 35, line 45 through column 36, line 67).

*Allowable Subject Matter*

**3. Claims 1-6 and 11 are allowed.**

The following is an examiner's statement of reasons for allowance: Claims 1-6 and 11 are allowed since certain key features of the claimed invention are not taught or fairly suggested by prior art. **In claim 1**, "adjusting a number of sustain pulses in each of the plural kinds of voltage waveforms according to a weight of luminance set for the at least one sustain period of the corresponding sub-field, wherein the plural kinds of sustain pulses bring light emissions that differ from one another". **In claim 11**, "a sustain pulse adjustment unit adjusting a number of the sustain pulses in each of the voltage waveforms to achieve a weight of luminance for the sustain period of the subfield, wherein sustain pulses having different voltage waveforms bring different respective light emission".

**4. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.**

5. The following is a statement of reasons for the indication of allowable subject matter: "wherein at least one sustain pulse having the step-like waveform is applied in an initial phase of the sustain period, and another sustain pulse having a rectangular voltage waveform is applied in a subsequent phase in a common sustain period".

***Response to Arguments***

6. Applicant's arguments with respect to claims 1-11 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mansour M. Said whose telephone number is 571-272-7679. The examiner can normally be reached on Monday through Thursday from 8:30-6:00 P.M. The examiner can also be reached on alternate Friday from 8:30 a.m. to 5:00 p.m. EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe whose telephone number is 571-272-7681.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: 571-273-8300 (for Technology Center 2600 only)

Hand-delivered responses should be brought to the Customer Service Window at the Randolph Building, 401, Dulany Street, Alexandria, VA 22314.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mansour M. Said

6/23/07

A handwritten signature in black ink, appearing to read 'R. Hjerpe', is positioned above the printed name and title.

RICHARD HJERPE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600